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AMENDMENT TRANSMITTAL LETTER

ATTORNEY'S DOCKET NO.	SERIAL NO.	FILING DATE	EXAMINER	GROUP ART UNIT
00-654/RCE	09/884,736	June 19, 2001	Lisa A. Kilday	2829

INVENTION

PLASMA TREATMENT OF LOW DIELECTRIC CONSTANT DIELECTRIC MATERIAL TO FORM STRUCTURES USEFUL IN FORMATION OF METAL INTERCONNECTS AND/OR FILLED VIAS FOR INTEGRATED CIRCUIT STRUCTURE

TO THE COMMISSIONER OF PATENTS AND TRADEMARKS:

Transmitted herewith is an amendment in the above-identified application.

Small entity status of this application under 37 CAR 1.27 has been established by a verified statement previously submitted.

A verified statement to establish small entity status under 37 CAR 1.9 and 1.27 is enclosed.

X No additional fee is required.

_____ The fee has been calculated as shown below:

(1)		(2)	(3)	SMALL ENTITY			OTHER THAN A SMALL ENTITY	
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NO. PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDIT. FEE	RATE	ADDIT. FEE
TOTAL	* 10	MINUS	** 20	* 0	x $ 9 =	$	x $ 18 =	$ 0
INDEP.	* 3	MINUS	*** 3	* 0	x $ 42 =	$	x $ 84 =	$ 0
FIRST PRESENTATION OF MULTIPLE DEP. CLAIM					+ $140 =	$	+ $280 =	$ 0
					TOTAL ADDIT. FEE	$	TOTAL	$ 0

OR

OR

* If the entry in Col. 1 is less than the entry in Col. 2, write "0" in Col. 3.

** If the "Highest No. Previously Paid For" IN THIS SPACE is less than 20, enter "20".

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Any additional filing fees required under 37 CAR 1.16.

Any patent application processing fees under 37 CAR 1.17.

August 1, 2003
(Date)

John P. Taylor
(Signature)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	09/884,736
Applicants:	:	Wilbur G. Catabay and Wei-Jen Hsia
Filed:	:	June 19, 2001
Title	:	PLASMA TREATMENT OF LOW DIELECTRIC CONSTANT DIELECTRIC MATERIAL TO FORM STRUCTURES USEFUL IN FORMATION OF METAL INTERCONNECTS AND/OR FILLED VIAS FOR INTEGRATED CIRCUIT STRUCTURE
Grp./ A.U.	:	2829
Examiner	:	Lisa A. Kilday
Docket No.	:	00-654/RCE

CERTIFICATE OF MAILING

I hereby certify that this amendment is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below:

on August 01, 2003
(Date of Mailing)

John P. Taylor, Reg. No. 22,369

John P. Taylor
Signature

August 01, 2003
Date of Signature

RESPONSE TO RESTRICTION

Honorable Commissioner for Patents
Post Office Box 1450
Alexandria, VA 22313-1450

Date: August 1, 2003

Sir:

This is in response to the Office Action mailed July 3, 2003.

In the July 3, 2003 Office Action, restriction was required between the following species of the claimed invention which are said to be patentably distinct:

Specie I: Method for forming single damascene (figs. 1-6)
Specie II: Method for forming dual damascene (figs. 7-11).

This Restriction was restated from the Office Action mailed July 31, 2002, in Applicants' parent application which required restriction between the following inventions:

Species I. A process for forming an integrated circuit (Figures 1-6), and
Species II. A process for forming a dual damascene structure (Figures 7-11).

Applicants hereby elect, with traverse, the invention of Specie I, the method of forming a single damascene structure. The reasons for traversing this restriction have already been set forth more fully in prior papers filed in the parent application to this case. Suffice it to say that the invention comprises treating the upper surface of a low k dielectric layer to form a densified layer of dielectric material which may be subsequently used to form a hard mask. Formation of such a hard mask from the densified layer (by formation of a photoresist mask over the densified layer) permits subsequent removal of the photoresist mask before etching openings in the underlying low k dielectric layer using the hard mask. This mitigates damage to the low k dielectric material during removal of the resist mask. The foregoing process can be used regardless of the number of low k dielectric layers to be densified, followed by hard mask formation, removal of resist, and etching of the dielectric layer through the hard mask.

It must be pointed out that the new classification in the Restriction of the two species by identification of single versus dual damascene (rather than merely by reference to figures) is

helpful to an understanding of the position of the USPTO (whether agreed to or not), and Applicants' attorney wishes to express his gratitude for this clarification.

With regard to the grouping of the figures with the respective species, Applicants must point out that Figure 6, classified with species I (single damascene) in the Office Action, is the precursor or starting structure used to form the double damascene structure shown in Figures 7-11. (See mini description of Figs. 6 and 7 on page 6, lines 19-26, and the plenary description of Figs. 6-7 on page 12, line 27 to page 13, line 12). Applicants, therefore, believe that the drawings classified with specie II should be Figures 6-11, not 7-11.

While this may appear to be a moot point, it is not because Applicants have filed a divisional application (Serial No. 10/422,270) claiming what Applicants believed to be the other invention restricted from the invention of this application. Using the new single damascene versus double damascene criteria, Applicants intend to put into this application all claims now in either application but readable on single damascene structures and to put all claims readable on dual damascene structures into the divisional application. Claim 28 of the divisional application, which is reproduced below, reads on Figure 6 (which would put it with the Specie I claims of this application based on the Figures 1-6 versus Figures 7-11 classification), yet also reads on a dual damascene structure as well (which puts it into a Specie II category as well).

> 28. The process of claim 26 including the further steps of:
> a) forming a second layer of low k dielectric material over said first etch mask of dielectric material;
> b) treating the upper surface of said second layer of low k dielectric material with a plasma formed from a reducing gas to form a second layer of densified dielectric material over the remainder of said second layer of low k dielectric material.

Applicants' undersigned attorney contacted Supervisory Examiner Kamand Cuneo by telephone concerning the classification of Figure 6 structure and she promised that this point would be addressed by the USPTO in a response to this election.